User Guide

XTP Extender

XTP T HWP 101

XTP Transmitter – Decora® Wallplate

Extron Electronics
INTERFACING, SWITCHING AND CONTROL

68-2422-01 Rev. A
06 14

Safety Instructions

Safety Instructions • English

WARNING: This symbol, ⚠, when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

ATTENTION: This symbol, ⚠, when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the Extron Safety and Regulatory Compliance Guide, part number 68-290-01, on the Extron website, **www.extron.com**.

Instructions de sécurité • Français

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ATTENTION : Ce pictogramme, ⚠, lorsqu'il est utilisé sur le produit, signale à l'utilisateur des instructions d'utilisation ou de maintenance importantes qui se trouvent dans la documentation fournie avec le matériel.

Pour en savoir plus sur les règles de sécurité, la conformité à la réglementation, la compatibilité EMI/EMF, l'accessibilité, et autres sujets connexes, lisez les informations de sécurité et de conformité Extron, réf. 68-290-01, sur le site Extron, **www.extron.com**.

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VORSICHT: Dieses Symbol ⚠ auf dem Produkt soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

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Instrucciones de seguridad • Español

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Chinese Simplified（简体中文）

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注意 ⚠ 若產品上使用此符號，是為了提醒使用者，設備隨附的用戶手冊中有重要的操作和維護（維修）說明。

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Korean

경고: 이 기호 ⚠ 가 제품에 사용될 경우, 제품의 인클로저 내에 있는 접지되지 않은 위험한 전류로 인해 사용자가 감전될 위험이 있음을 경고합니다.

주의: 이 기호 ⚠ 가 제품에 사용될 경우, 장비와 함께 제공된 책자에 나와 있는 주요 운영 및 유지보수(정비) 지침을 경고합니다.

안전 가이드라인, 규제 준수, EMI/EMF 호환성, 접근성, 그리고 관련 항목에 대한 자세한 내용은 Extron 웹 사이트(**www.extron.com**)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오.

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference. This interference must be corrected at the expense of the user.

ATTENTION: The Twisted Pair Extension technology works with shielded twisted pair (STP) cables **only**. To ensure FCC Class A and CE compliance, STP cables and STP connectors are also required.

For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the "**Extron Safety and Regulatory Compliance Guide**" on the Extron website.

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Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

WARNING: Potential risk of severe injury or death.
AVERTISSEMENT : Risque potentiel de blessure grave ou de mort.

ATTENTION:
- Risk of property damage.
- Risque de dommages matériels.

NOTE: A note draws attention to important information.

TIP: A tip provides a suggestion to make working with the application easier.

Software Commands

Commands are written in the fonts shown here:

```
^AR Merge Scene,,Op1 scene 1,1 ^B 51 ^W^C
[Ø1] R ØØØ4 ØØ3ØØ ØØ4ØØ ØØ8ØØ ØØ6ØØ [Ø2] 35 [17] [Ø3]
```

Esc X1 * X17 * X20 * X23 * X21 CE ←

NOTE: For commands and examples of computer or device responses mentioned in this guide, the character "Ø" is used for the number zero and "O" represents the capital letter "o."

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 2Ø8.132.18Ø.48: bytes=32 times=2ms TTL=32
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx –t
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

From the **File** menu, select **New**.

Click the **OK** button.

Specifications Availability

Product specifications are available on the Extron website, **www.extron.com**.

Contents

Introduction 1

About this Guide 1
About the XTP T HWP 101 1
Key Features 2

Installation 4

Installation Overview 4
Installing the Metal Junction Box or Mud Ring 5
Cutting an Opening in the Mounting Surface 5
Installing the Mud Ring 6
Installing a UL Listed Metal Junction Box 7
Rear Panel Connectors 8
Mounting the XTP T HWP 101 9
Front Panel Connectors 10
Making Connections 11
HDMI Connection 11
TP Cable Termination and Recommendations 11
Power Connection 13

Operation 16

Front Panel Features 16
Reset Modes 17

SIS Configuration and Control 18

Host Device Connection 18
SIS Programming Guide 18
Host-to-Device and Device-to-Host Communication 18
Error Responses 18
Using the Command and Response Tables for SIS Commands 19
Symbol Definitions 19
Command and Response Tables for SIS Commands 20
EDID Commands 20
Advanced Configuration Commands 20

XTP System Configuration Software 21

Installing the XTP System Configuration Software 21
Using the XTP System Configuration Software 22
Connections 22
Top Menu 23
Device Settings 26

Reference Information 30

Updating Firmware with Firmware Loader 30
Downloading Extron Firmware Loader 30
Installing Firmware Loader 31
Downloading Firmware 32
Installing Firmware with Firmware Loader 33
Mounting Template 34

Introduction

This section contains general information about this guide and the Extron XTP T HWP 101 Wallplate Transmitter, and selected device features. Topics in this section include:

- **About this Guide**
- **About the XTP T HWP 101**
- **Key Features**

About this Guide

This guide contains procedures for installation, operation, and control of the XTP T HWP 101 Wallplate Transmitter as well as reference information. In this guide, the terms “XTP T HWP 101” and “transmitter” are used interchangeably to refer to all models of the XTP T HWP 101 Wallplate Transmitter.

About the XTP T HWP 101

The Extron XTP T HWP 101 is a single gang Decora®-style wallplate transmitter for sending HDMI with embedded audio up to 330 feet (100 meters) over a single shielded twisted pair cable. The one-gang form factor provides maximum efficiency and convenient installation in wall mount, floor box, and furniture mount designs. The transmitter is HDCP compliant and supports computer video to 1920x1200, including 1080p/60 Deep Color and 2K resolutions. It offers many of the integrator-friendly features that are standard with XTP products, such as EDID Minder and remote power capability. The single-gang XTP T HWP 101 works with XTP Systems for signal distribution and long-distance transmission in wall-mount environments.

The XTP T HWP 101 can be powered locally or remotely through an Extron Power Injector or XTP matrix switcher (see **Power Connection** on page 13).

To configure and control the XTP T HWP 101, connect a host device, such as a computer, to the USB Config port and enter Simple Instruction Set (SIS) commands (see **SIS Configuration and Control** on page 18) or use the XTP System Configuration Software (see **XTP System Configuration Software** on page 21).

Figure 1 shows a typical point-to-point application of the XTP T HWP 101.

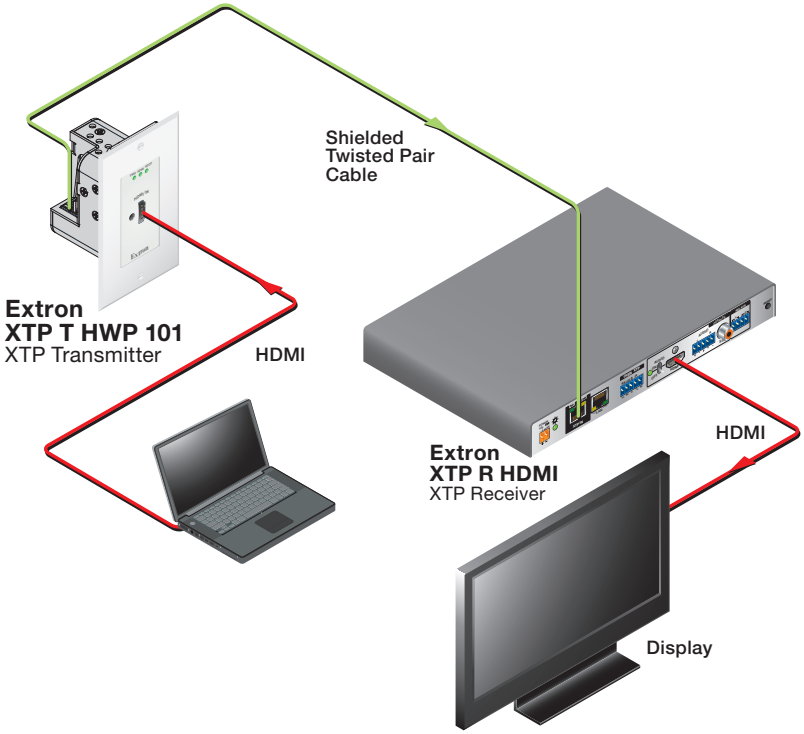


Figure 1. Typical Point-to-Point Application Diagram

Key Features

XTP compatibility — Provides high reliability and maximum performance on an economical and easily installed cable infrastructure. The XTP T HWP 101 transmits video with embedded audio up to 330 feet (100 meters) over a single shielded twisted pair cable infrastructure.

Wall mountable — Mounts in a one-gang metal junction box or the provided mud ring.

Support for computer-video to 1920x1200, including HDTV 1080p/60 Deep Color and 2K signals — Supports digital signal transmission up to 330 feet over a single shielded twisted pair cable, maintaining superior image quality at the highest resolutions.

Shielded twisted pair cable compatibility — Optimized for use with common shielded twisted pair cable types. XTP systems fully support a maximum transmission distance of 330 feet (100 meters) for all compatible resolutions when used with shielded twisted pair cable. Shielded twisted pair cabling with solid center conductor sizes of 24 AWG or better is recommended for optimal performance.

HDMI specification features — Support data rates up to 6.75 Gbps, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC pass-through.

HDCP-compliance — Ensures display of content-protected media and interoperability with other HDCP-compliant devices.

EDID Minder — Automatically manages EDID communication between connected devices to ensure that all sources properly power up and reliably display content.

Key Minder — Authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source signal to one or more displays.

Remote power capability — To simplify integration, the XTP T HWP 101 can be powered by an XTP CrossPoint Matrix Switcher or XTP Power Injector.

Multiple embedded audio formats — Compatible with a broad range of multi-channel audio signals, providing reliable operation with HDMI sources.

EDID and HDCP transmission — DDC channels are actively buffered, allowing continuous communication between source and display.

Installation

This section contains information for mounting, connecting, and wiring the XTP T HWP 101. Topics in this section include:

- **Installation Overview**
- **Installing the Metal Junction Box or Mud Ring**
- **Rear Panel Connectors**
- **Mounting the XTP T HWP 101**
- **Front Panel Connectors**
- **Making Connections**

Installation Overview

The XTP T HWP 101 can be installed into the provided mud ring or a UL Listed metal electrical junction box.

NOTE: If using a junction box, use a metal one only.

1. Prepare the mounting surface.

   CAUTION: Risk of personal injury. Failure to check the items listed below may result in personal injury.

   ATTENTION : Risque de blessure. La non-vérification des éléments listés ci-dessous peut provoquer des blessures.

   ATTENTION: Failure to check the items listed below may result in property damage.

   ATTENTION : La non-vérification des éléments listés ci-dessous peut provoquer des dommages matériels.

   - Ensure there are no utility cables or pipes at the intended location that might be damaged or cause injury when installing the device.
   - Check that the installation meets building, electrical, and safety codes.
   - Ensure there is sufficient space behind the device.
   - Choose a location that will allow cable runs without interference.

   NOTES:
   - Cables may need to be installed in the wall or conduits before installation.
   - The mud ring does not require attachment to wall studs.
   - For metal junction boxes, refer to the manufacturer for more installation requirements.

2. Cut a hole in the mounting surface (see **Cutting an Opening in the Mounting Surface** on page 5).

3. Install the mud ring or metal junction box in the mounting surface (see **Installing the Mud Ring** on page 6 or **Installing a UL Listed Metal Junction Box** on page 7).
4. Route and connect cables to the rear panel connectors (see **Rear Panel Connectors** on page 8).
5. Mount the XTP T HWP 101 to the mud ring or metal junction box (see **Mounting the XTP T HWP 101** on page 9).
6. Connect an HDMI input to the front panel connector (see **Front Panel Connectors** on page 10).
7. Supply power to all connected devices.

Installing the Metal Junction Box or Mud Ring

Cutting an Opening in the Mounting Surface

1. Using an appropriate template or the mounting enclosure as a guide, mark the area of the wall that will be cut with a soft pencil (for the provided mud ring, see **Mounting Template** on page 34).

   NOTE: Check with the manufacturer of the metal junction box for specific installation requirements.

2. Use a jigsaw or small hand saw to carefully cut away the material within the guidelines drawn in step 1.

   NOTE: If using a template or the mud ring as a guide for cutting the hole in drywall, cut inside the guidelines to maximize the contact the mud ring makes with the drywall.

4. If using a mud ring in a wall with insulation inside, remove at least 6 inches of the insulation in all directions around the cutout.

   NOTE: If a wall stud interferes with removing 6 inches of insulation around the cutout, remove the insulation between the cutout and wall stud.

5. Check the size of the opening by laying the mud ring or metal junction box against it. The mounting device should fit snugly in the opening.
6. If needed, use a saw, file, or sandpaper to enlarge the hole.

   CAUTION: Risk of personal injury. Smooth the edges of the opening to avoid personal injury during installation.

   ATTENTION : Risque de blessure. Lissez les bords de l'ouverture afin d'éviter toute blessure lors de l'installation.

   ATTENTION: Smooth the edges of the opening to avoid damage to the mounting device or the cables.

   ATTENTION : Lissez les bords de l'ouverture afin d'éviter d'endommager l'appareil de montage ou les câbles.

Installing the Mud Ring

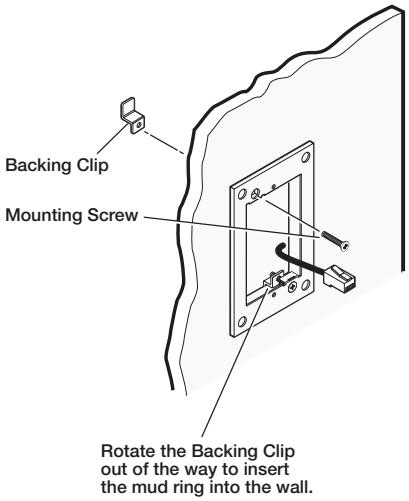


Figure 2. Installing the Mud Ring with Backing Clips

1. Place 1.25 inches (3.18 cm) long or 0.75 inch (1.90 cm) #6-32 thread machine screws through the large holes in the two corners of the mounting bracket. Use the shortest screw possible.
2. Loosely fasten the mounting backing clip on the end of each screw.
3. Insert the mounting bracket into the opening in the wall.
4. Rotate each backing clip so that the tab is behind the installation surface to hold the bracket snuggly in place when the screw is tightened.

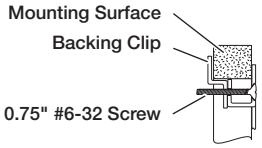


Figure A

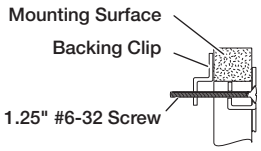


Figure B

Figure 3. Backing Clip Installation

NOTE: The backing clip can be installed as shown in Figure A or Figure B (see figure 3).

5. Use a cross-head (Phillips) screwdriver to fasten the screws and backing clips in place.

Installing a UL Listed Metal Junction Box

Metal junction boxes may differ slightly from model to model. Check with the manufacturer for specific installation instructions.

NOTE: Use metal junction boxes only.

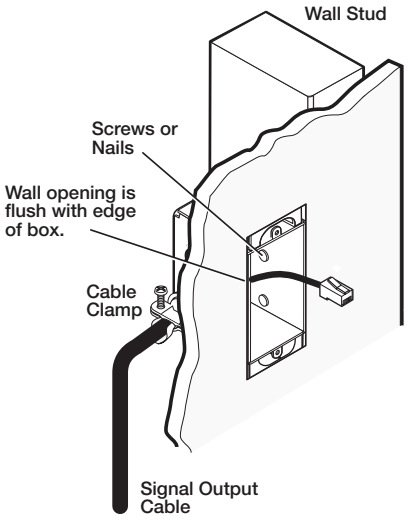


Figure 4. Installing a Metal Junction Box

1. Insert the metal junction box into the hole in the wall.
2. Secure it to the stud using two screws or nails, as appropriate. The front edge of the metal junction box must be flush with the front surface of the wall.
3. Feed cables through a knockout opening in the metal junction box.
4. Secure cables with clamps or ties to provide strain relief.
5. Trim back and insulate shields with heat shrink.

ATTENTION: To prevent short circuits, the outer foil shield can be cut back to the point where the cable exits the cable clamp. Both braided and foil shields should be connected to an equipment ground at the other end of the cable.

ATTENTION : Afin d'éviter les court circuits, le blindage en aluminium extérieur peut être réduit jusqu'à ce que le câble sorte de la cosse de câble. Le blindage tressé et le blindage en aluminium devraient être connectés à la masse d'un équipement à l'autre bout du câble.

Rear Panel Connectors

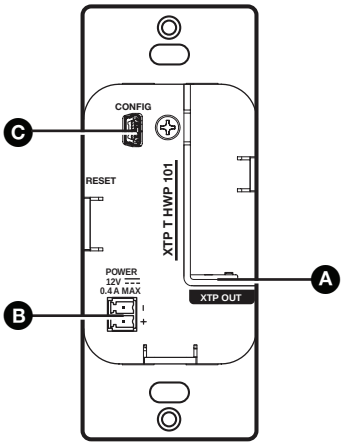
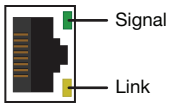


Figure 5. Rear Panel Connectors

A **XTP output connector** — Connect a twisted pair cable to the RJ-45 connector labeled "XTP OUT" on the XTP T HWP 101 and the XTP input port on another XTP device to pass all signals (see **TP Cable Termination and Recommendations** on page 11). This cable carries the following signals:

- Digital video
- Digital audio
- Remote power
- System communication

Signal LED indicator — Lights green when the transmitter outputs an XTP signal to a compatible receiver or matrix switcher.



Link LED indicator — Lights yellow when XTP devices are connected and communication is established.

ATTENTION:

- Do not connect this connector to a computer data or telecommunications network.
- Ne connectez pas ce port à des données informatiques ou à un réseau de télécommunications.

- XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors (see **Remote power** on page 15).
- XTP à distance est destiné à une utilisation en intérieur seulement. Aucune partie du réseau qui utilise l'alimentation XTP à distance ne peut être routée en extérieur (voir **Remote power** à la page 15).

B **Power connector** — Connect an external power supply to the 2-pole captive screw connector. Confirm the polarity of the power supply wires.

NOTE: The XTP T HWP 101 can also be powered remotely (see **Power Connection** on page 13).

C **Configuration port** — If desired, connect a host device to the rear panel USB mini-B Config port for configuring the transmitter.

Mounting the XTP T HWP 101

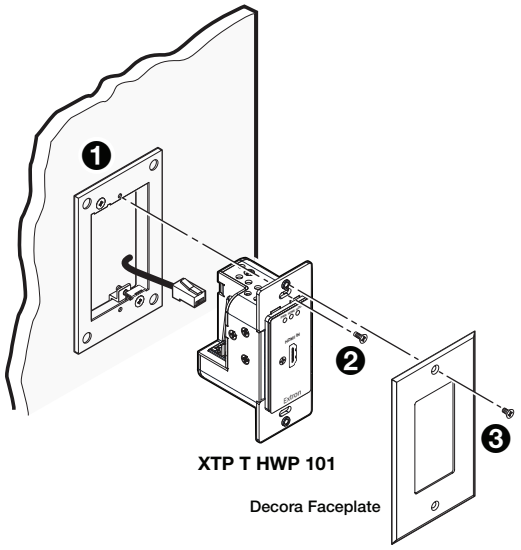


Figure 6. Installing the XTP T HWP 101 in the Provided Mud Ring

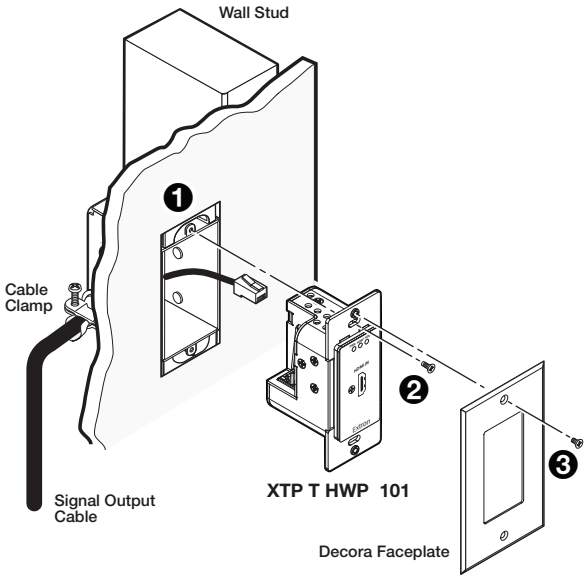


Figure 7. Installing the XTP T HWP 101 in a Metal Junction Box

1. Align the mounting screws on the XTP T HWP 101 with the available holes on the mud ring (see figure 6, ❶) or metal junction box (see figure 7, ❶).
2. Using the provided screws, attach the XTP T HWP 101 to the mud ring (see figure 6, ❷) or metal junction box (see figure 7, ❷).
3. Use two mounting screws to attach the Decora faceplate to the XTP T HWP 101 (see figure 6 or 7, ❸).

Front Panel Connectors

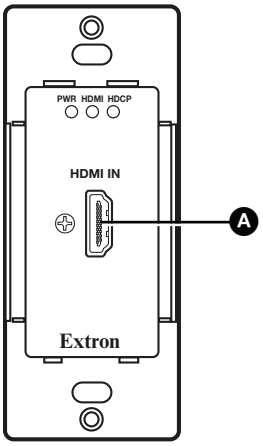


Figure 8. Front Panel Connectors

Ⓐ **HDMI input connector** — Connect a digital video source to the female HDMI connector.

NOTES:

- The maximum HDMI cable length is 15 feet.
- Use an Extron HDMI LockIt Lacing Bracket to secure the HDMI connector to the device (see **HDMI Connection** on page 11).

Making Connections

HDMI Connection

To secure the HDMI cable to the HDMI input connector, use an Extron LockIt Lacing Bracket and a tie clip.

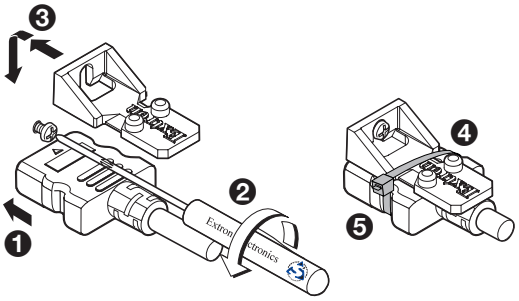


Figure 9. Installing the LockIt Lacing Bracket

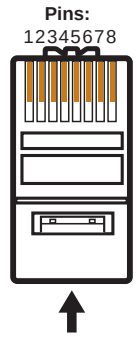
1. Plug the HDMI cable into the front panel connection (see figure 9, ❶).
2. Loosen the HDMI connection mounting screw from the panel (see ❷) enough to allow the LockIt Lacing Bracket to be placed over it. The screw does not have to be removed.
3. Place the LockIt Lacing Bracket on the screw and against the HDMI connector (see ❸), then tighten the screw to secure the bracket.
4. Loosely place the included tie wrap around the HDMI connector and the LockIt Lacing Bracket (see ❹).
5. While holding the connector securely against the lacing bracket, use pliers or similar tools to tighten the tie wrap, then remove any excess length (see ❺).

ATTENTION: Connect and pull the tie wraps until they are secure. Do not overtighten.

ATTENTION : Connectez et tirez les serre-câbles jusqu'à ce qu'ils soient sécurisés. Ne pas trop serrer.

TP Cable Termination and Recommendations

Use the following pin configurations for twisted pair cables.



TIA/EIA-T568B	
Pin	**Wire Color**
1	White-orange
2	Orange
3	White-green
4	Blue
5	White-blue
6	Green
7	White-brown
8	Brown

Figure 10. TP Cable Termination

Supported cables

The XTP T HWP 101 is compatible with shielded twisted pair (F/UTP, SF/UTP, and S/FTP) cable.

ATTENTION:

- Do not use Extron UTP23SF-4 Enhanced Skew-Free AV UTP cable or STP201 cable to link the XTP products.
- N'utilisez pas le câble AV Skew-Free UTP version améliorée UTP23SF d'Extron ou le câble STP201 pour relier les produits XTP.

- To ensure FCC Class A and CE compliance, STP cables and STP connectors are required.
- Afin de s'assurer de la compatibilité entre FCC Classe A et CE, les câbles STP et les connecteurs STP sont nécessaires.

Cable recommendations

Extron recommends using the following practices for XTP communication to achieve full transmission distances up to 330 feet (100 meters) and reduce transmission errors.

- Use the following Extron XTP DTP 24 SF/UTP cables and connectors for the best performance:
  - **XTP DTP 24/1000** Non-Plenum 1000' (305 m) spool 22-236-03
  - **XTP DTP 24P/1000** Plenum 1000' (305 m) spool 22-235-03
  - **XTP DTP 24 Plug** Package of 10 101-005-02
- If not using XTP DTP 24 cable, at a minimum, Extron recommends 24 AWG, solid conductor, STP cable with a minimum bandwidth of 400 MHz.
- Terminate cables with shielded connectors to the TIA/EIA-T568B standard (see **figure 10** on page 11).
- Limit the use of more than two pass-through points, which may include patch points, punch down connectors, couplers, and power injectors. If these pass-through points are required, use shielded couplers and punch down connectors.

NOTE: When using STP cable in bundles or conduits, consider the following:

- Do not exceed 40% fill capacity in conduits.
- Do not comb the cable for the first 20 meters, where cables are straightened, aligned, and secured in tight bundles.
- Loosely place cables and limit the use of tie wraps or hook-and-loop fasteners.
- Separate twisted pair cables from AC power cables.

Power Connection

Apply power to the transmitter locally with the provided power supply or remotely with a power injector or an XTP matrix switcher.

ATTENTION: XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors (see **Remote power** on page 15).

ATTENTION : XTP à distance est destiné à une utilisation en intérieur seulement. Aucune partie du réseau qui utilise l'alimentation XTP à distance ne peut être routée en extérieur (voir **Remote power** à la page 15).

Local power

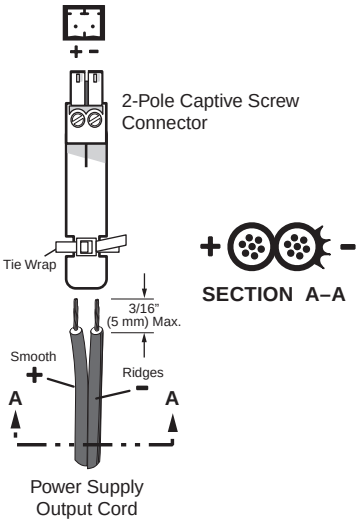


Figure 11. Power Wiring

The XTP T HWP 101 can be connected to a local power supply.

WARNING: Electric shock hazard. The two power cord wires must be kept separate while the power supply is plugged in. Remove power before wiring.

Avertissement : Risque de choc électrique grave. Les deux cordons d'alimentation doivent être tenus à l'écart l'un de l'autre quand l'alimentation est branchée. Couper l'alimentation avant de faire l'installation électrique.

ATTENTION:

- This product is intended for use with a UL Listed power source marked "Class 2" or "LPS" rated 12 VDC, 1.0 A minimum. Always use a power supply supplied by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the unit.
- Ce produit est destiné à une utilisation avec une source d'alimentation listée UL avec l'appellation « Classe 2 » ou « LPS » et normée 12 Vcc, 1,0 A minimum. Utilisez toujours une source d'alimentation fournie par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute conformité réglementaire et peut endommager la source d'alimentation ainsi que l'unité.

- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities. The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 725 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to a building structure or similar structure.
- Sauf mention contraire, les adaptateurs AC/DC ne sont pas appropriés pour une utilisation dans les espaces d'aération ou dans les cavités murales. Cette installation doit toujours être en accord avec les mesures qui s'applique au National Electrical Code ANSI/NFPA 70, article 725, et au Canadian Electrical Code, partie 1, section 16. La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.

- Power supply voltage polarity is critical. Incorrect voltage polarity can damage the power supply and the unit. The ridges on the side of the cord identify the power cord negative lead.
- La polarité de la source d'alimentation est primordiale. Une polarité incorrecte pourrait endommager la source d'alimentation et l'unité. Les stries sur le côté du cordon permettent de repérer le pôle négatif du cordon d'alimentation.

- The length of the exposed (stripped) copper wires is important. The ideal length is 3/16 inch (5 mm).
- La longueur des câbles exposés est primordiale lorsque l'on entreprend de les dénuder. La longueur idéale est de 5 mm (3/16 inch).

TIP: Do not tin the stripped power supply leads. Tinned wires are not as secure in the captive screw connectors and could be pulled out.

Remote power

The XTP T HWP 101 can be powered remotely through an XTP Power Injector or through an XTP matrix switcher.

ATTENTION: XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors.

ATTENTION : XTP à distance est destiné à une utilisation en intérieur seulement. Aucune partie du réseau qui utilise l'alimentation XTP à distance ne peut être routée en extérieur.

Power injector

To power the XTP T HWP 101 remotely with an XTP Power Injector, power one device locally (see **Local power** on page 13) and connect an XTP Power Injector to the XTP cable run along the XTP ports (see the *XTP Power Injector User Guide* for more installation information).

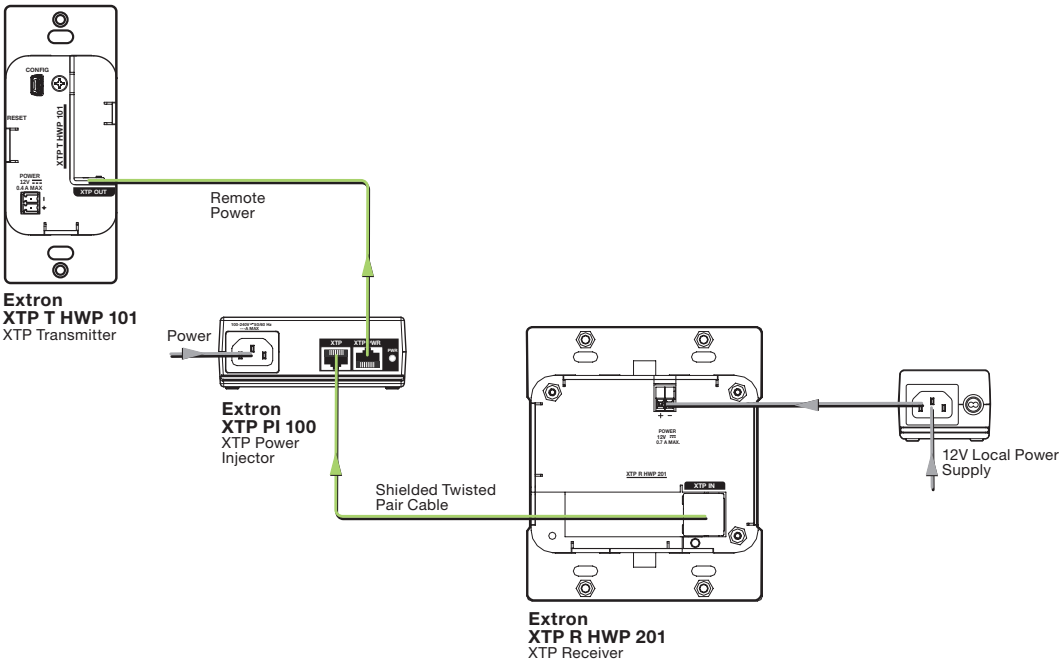


Figure 12. Typical Pont-to-point Application with Remote Power

NOTE: The power injector provides remote power up to 330 feet with a shielded twisted pair cable with 24 AWG wire.

Direct power from an XTP matrix switcher

XTP matrix switchers have a fixed amount of power available to provide remote power to connected XTP devices (see the XTP matrix switcher user guide for more details). To manage available power from the XTP matrix switcher, use the XTP System Configuration Software with the XTP matrix switcher.

Operation

This section contains information for front panel operation and configuration of the XTP T HWP 101. Topics in this section include:

- **Front Panel Features**
- **Reset Modes**

After all transmitters, all receivers, and their connected devices are powered up, the system is fully operational. If any problems are encountered, verify that the cables are routed and connected properly. If problems persist, call the Extron S3 Sales & Technical Support Hotline. See the **contact numbers** on the last page of this guide for the nearest Extron office.

Front Panel Features

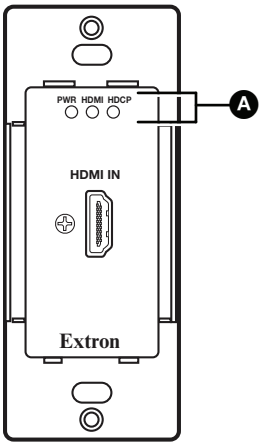


Figure 13. Front Panel Features

A LED indicators

Power LED indicator — Lights when power is applied to the device.

HDMI LED indicator — Lights when an HDMI input signal is detected.

HDCP LED indicator — Lights when the HDMI input signal is encrypted.

Reset Modes

Use the recessed Reset button (see figure 14, A) on the side panel of the transmitter to restore factory-shipped firmware. To access the Reset button, the device may need to be removed.

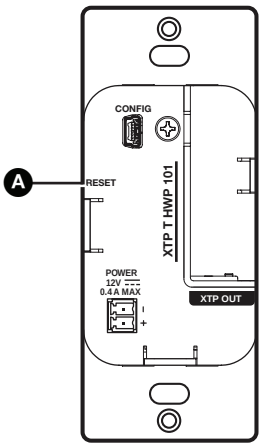


Figure 14. Rear Panel Reset Button

	Reset Mode Summary		
	Mode Activation	**Result**	**Purpose/Notes**
Factory Reset (Mode 1)	Press the recessed Reset button while applying power to the device. **NOTE:** After a mode 1 reset, update the device with the latest firmware version. DO NOT operate the firmware version that results from this mode reset.	The device reverts to the factory default firmware. **NOTE:** If you do not want to update the firmware or if you perform a mode 1 reset by mistake, cycle power to the device to return the firmware version running prior to the reset.	Use mode 1 to roll back to factory firmware for a single power cycle if an incompatibility issue arises.

SIS Configuration and Control

The XTP T HWP 101 can be configured and controlled using Extron Simple Instruction Set (SIS) commands or the XTP System Configuration Software (see **XTP System Configuration Software** on page 21). This section contains basic SIS communication details and SIS commands and responses when connected directly to the XTP T HWP 101. Topics in this section include:

- **Host Device Connection**
- **SIS Programming Guide**
- **Command and Response Tables for SIS Commands**

Host Device Connection

Use a connected computer running the Extron DataViewer utility to send and receive SIS commands and responses. To connect directly to an XTP T HWP 101, connect the computer to the XTP T HWP 101 through the rear panel USB Config port.

SIS Programming Guide

Host-to-Device and Device-to-Host Communication

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the XTP T HWP 101 determines that a command is valid, it executes the command and sends a response to the host device. All responses from the transmitter to the host end with a carriage return and a line feed (CR/LF = ↵), which signals the end of the response character string. A string is one or more characters.

Error Responses

When the XTP T HWP 101 receives an SIS command and determines that it is valid, it performs the command and sends the corresponding response to the host device. If the command is determined invalid or contains invalid parameters, the transmitter returns an error response to the host. The error response codes are:

E1Ø = Invalid command

E13 = Invalid parameter

E14 = Not valid for this configuration

E17 = Invalid command for signal type

E22 = Busy

Using the Command and Response Tables for SIS Commands

The command and response tables begin on page 20. Figure 15 shows the hexadecimal equivalent of ASCII characters used in the command and response tables.

NOTE: Upper and lowercase text can be used interchangeably unless otherwise stated.

Space →

ASCII to Hex Conversion Table										Esc	1B	CR	ØD	LF	ØA
	2Ø	!	21	"	22	#	23	$	24	%	25	&	26	'	27
(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F
Ø	3Ø	1	31	2	32	3	33	4	34	5	35	6	36	7	37
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
@	4Ø	A	41	B	42	C	43	D	44	E	45	F	46	G	47
H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F
P	5Ø	Q	51	R	52	S	53	T	54	U	55	V	56	W	57
X	58	Y	59	Z	5A	[	5B	\	5C	]	5D	^	5E	_	5F
`	6Ø	a	61	b	62	c	63	d	64	e	65	f	66	g	67
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F
p	7Ø	q	71	r	72	s	73	t	74	u	75	v	76	w	77
x	78	y	79	z	7A	{	7B	l	7C	}	7D	~	7E	DEL	7F

Figure 15. ASCII to Hexadecimal Conversion

Symbol Definitions

- ↵ = Carriage return and line feed
- ← = Carriage return with no line feed
- | = Pipe (can be used interchangeably with the ← character).
- • = Space
- Esc = Escape key
- W = Can be used interchangeably with the Esc character.

Command and Response Tables for SIS Commands

Command	ASCII Command (Host to Device)	Response (Device to Host)	Additional Description
EDID Commands			
NOTE: For EDID management, use the XTP System Configuration Software (see **EDID Minder** on page 28).			
Advanced Configuration Commands			
HDCP Authorized device			
HDCP Authorized device On	Esc E1HDCP←	HdcpE1↵	HDCP Authorized device on (default).
HDCP Authorized device Off	Esc EØHDCP←	HdcpEØ↵	HDCP Authorized device off.
Query HDCP authorized device status	Esc EHDCP←	HdcpE X1 ↵	View the HDCP authorized device status.
Factory defaults			
System reset	Esc ZXXX←	Zpx↵	Resets unit to factory default.
Status			
View input signal presence	ØLS	Frq X2 ↵	View the input signal presence of the input.
Query HDCP input	Esc IHDCP←	HdcpI X3 ↵	View the HDCP status of the HDMI input.
Query firmware version	Q	x.xx↵	View the firmware version.
Query full firmware version	*Q	x.xx.xxxx↵	View the full firmware version.

NOTE:
X1 = Enable or disable — Ø = disable; 1 = enable (default)
X2 = Video signal status — Ø = video or TMDS not detected; 1 = video or TMDS detected
X3 = HDCP status — Ø = No source; 1 = HDCP-compliant source; 2 = Non-HDCP compliant source

XTP System Configuration Software

This section contains installation and configuration procedures for the XTP System Configuration Software for configuring and controlling the XTP T HWP 101. It can also be controlled with SIS commands (see **SIS Configuration and Control** on page 18). Topics in this section include:

- **Installing the XTP System Configuration Software**
- **Using the XTP System Configuration Software**

Installing the XTP System Configuration Software

The program is available for download on the Extron website, **www.extron.com**.

Figure 16. Extron Website Download Page

1. On the Extron website, click the **`Download`** tab (see figure 16, ❶).
2. From the left sidebar, click the **`XTP System Configuration Software`** link (❷).
3. Click the **`Download Now`** button (❸).
4. Submit any required information to start the download. Note where the file is saved.
5. Open the executable (.exe) file from the location where it was saved.
6. Follow the instructions that appear on the screen. By default, the installation creates a directory in the appropriate Program Files folder named “Extron\XTP System Configuration.”

Using the XTP System Configuration Software

The XTP T HWP 101 can be controlled directly from the rear panel Config port or remotely from an XTP matrix switcher.

Connections

The XTP System Configuration Software opens to the Connections screen. This screen is used to establish communication with an XTP device through USB connection (see **Configuration port** on page 8). Ensure the transmitter is connected and powered on before attempting to connect to it.

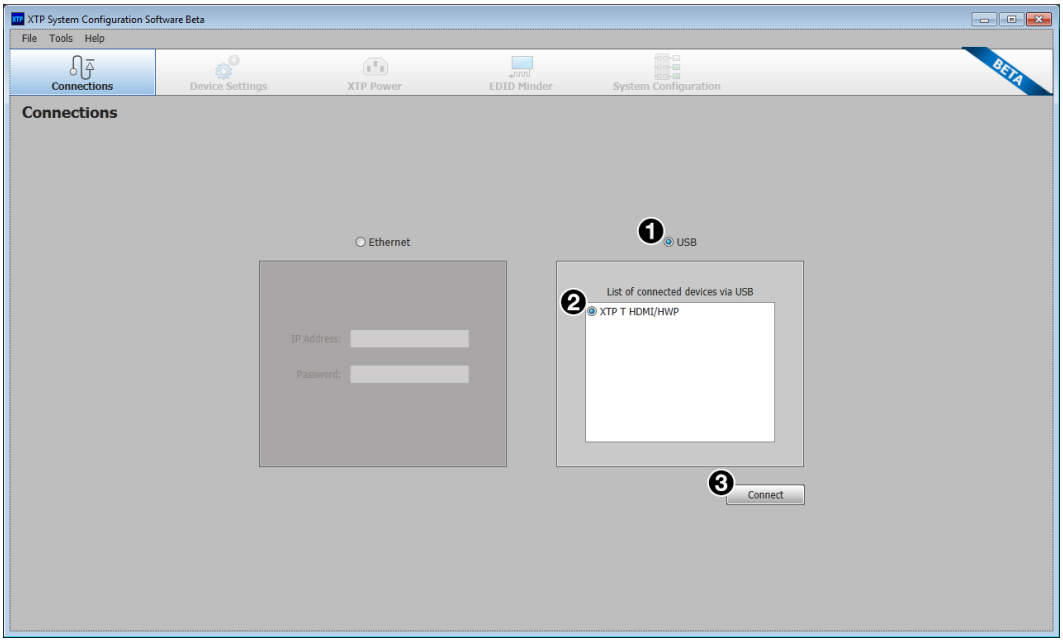


Figure 17. Connections Screen

1. From the Connections screen in the software, select the **USB** radio button (see figure 17, ❶).
2. Select the connected device to be controlled from the displayed list (❷).
3. Click the **Connect** button (❸). The Device Settings screen opens.

Top Menu

The top menu bar contains three menus for configuring software settings.

File menu

The **File** menu contains options for disconnecting from the transmitter and exiting the program. To access the menu, click the **File** menu.

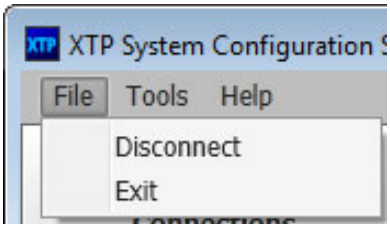


Figure 18. File Menu

Disconnect

This option disconnects the connected device from the XTP System Configuration Software.

From the **File** menu, select **Disconnect**. The Connections screen opens.

NOTE: If the device is already disconnected, the **Disconnect** option is disabled until a device is connected.

Exit

This option disconnects the transmitter from the software and closes the application.

From the **File** menu, select **Exit** to close the application.

Tools menu

The **Tools** menu contains an option for updating firmware. To access this menu, click the **Tools** menu.

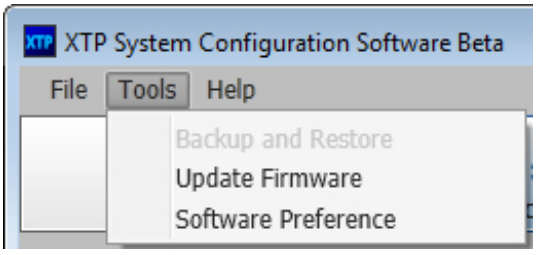


Figure 19. Tools Menu

NOTE: The **Backup and Restore** and **Software Preference** options are not available when directly connected to the XTP T HWP 101.

Update Firmware

This option uploads firmware from the host device to the connected device.

NOTE: If necessary, download new firmware from the Extron website (see **Downloading Firmware** on page 32).

1. From the **Tools** menu, select **Update Firmware**. A dialog box opens to ask permission to disconnect from the device.

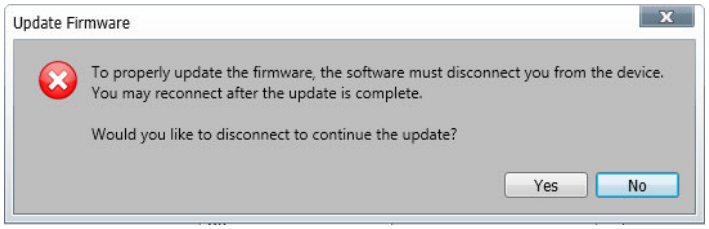

Update Firmware
To properly update the firmware, the software must disconnect you from the device.
You may reconnect after the update is complete.
Would you like to disconnect to continue the update?
Yes
No

Figure 20. Confirm Disconnect Dialog Box

2. Click the **Yes** button to disconnect from the device and continue with the firmware update process. The Update Firmware dialog box opens.

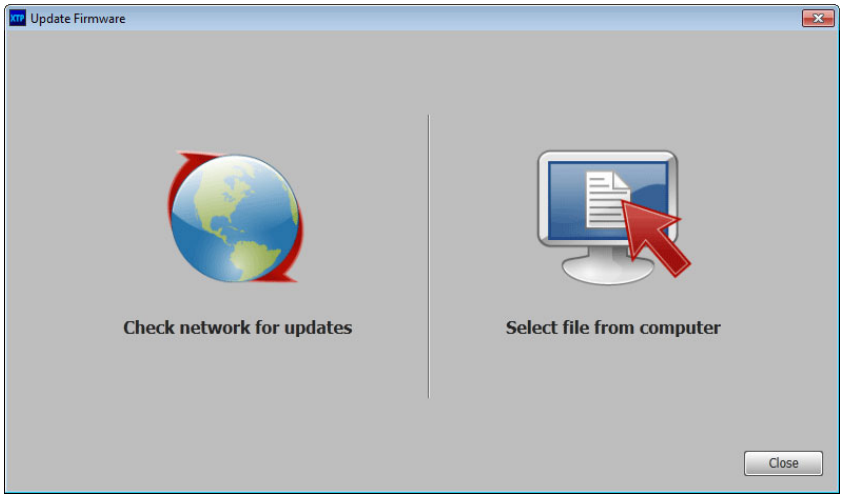


Figure 21. Update Firmware Dialog Box

3. Click the **Check network for updates** icon to search the LAN or WAN for firmware files or click the **Select file from computer** icon to select a firmware file from the connected host device. The Browse dialog box opens.
4. Select the desired firmware file and click the **Open** button.
5. Click the **Close** button after the firmware finishes updating.

Help menu

The **Help** menu contains a way to access XTP System Configuration Software information, a link to the help file, and a link to the Extron website.

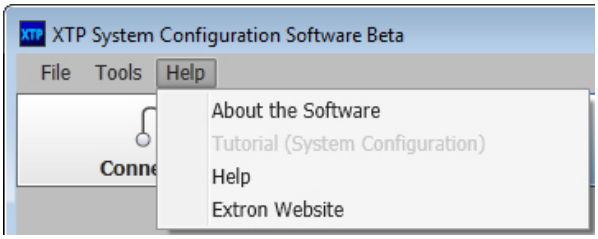


Figure 22. Help Menu

NOTE: The **Tutorial (System Configuration)** option is not available when directly connected to the XTP T HWP 101.

About the Software

This option provides basic information about the XTP System Configuration Software, including version number and copyright information.

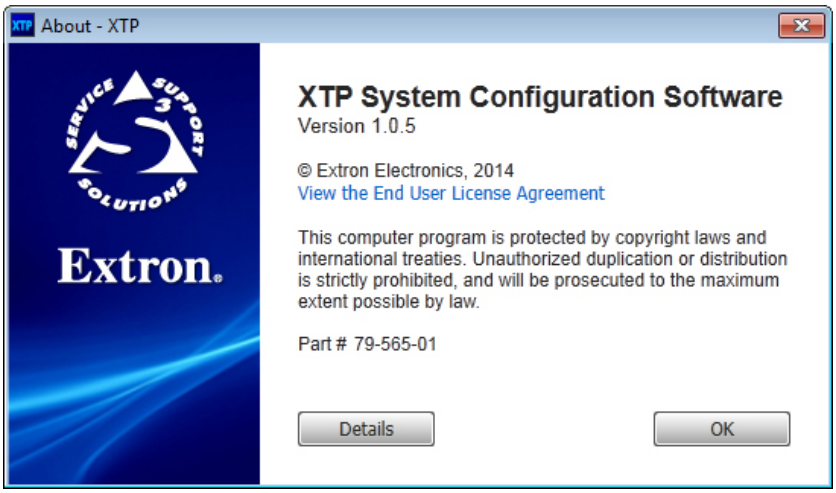

About - XTP
XTP System Configuration Software
Version 1.0.5
© Extron Electronics, 2014
View the End User License Agreement
This computer program is protected by copyright laws and international treaties. Unauthorized duplication or distribution is strictly prohibited, and will be prosecuted to the maximum extent possible by law.
Part # 79-565-01
Details
OK
Extron

Figure 23. About - XTP Dialog Box (Example)

1. From the **Help** menu, select **About the Software**. The About - XTP dialog box opens.
2. Click the **Details** button for more information.
3. Click the **Ok** button to close the dialog box.

Help

This option opens the *XTP System Configuration Software* help file in a Web browser.

From the **Help** menu, select **Help**.

Extron Website

This option opens the Extron website in a Web browser.

From the **Help** menu, select **Extron Website**.

Device Settings

The Device Settings screen allows a user to view and edit various device settings for the device directly connected to the PC running the XTP software. Click the **Device Settings** icon (see figure 24, ❶) on the Global Navigation bar to open the Device Settings screen.

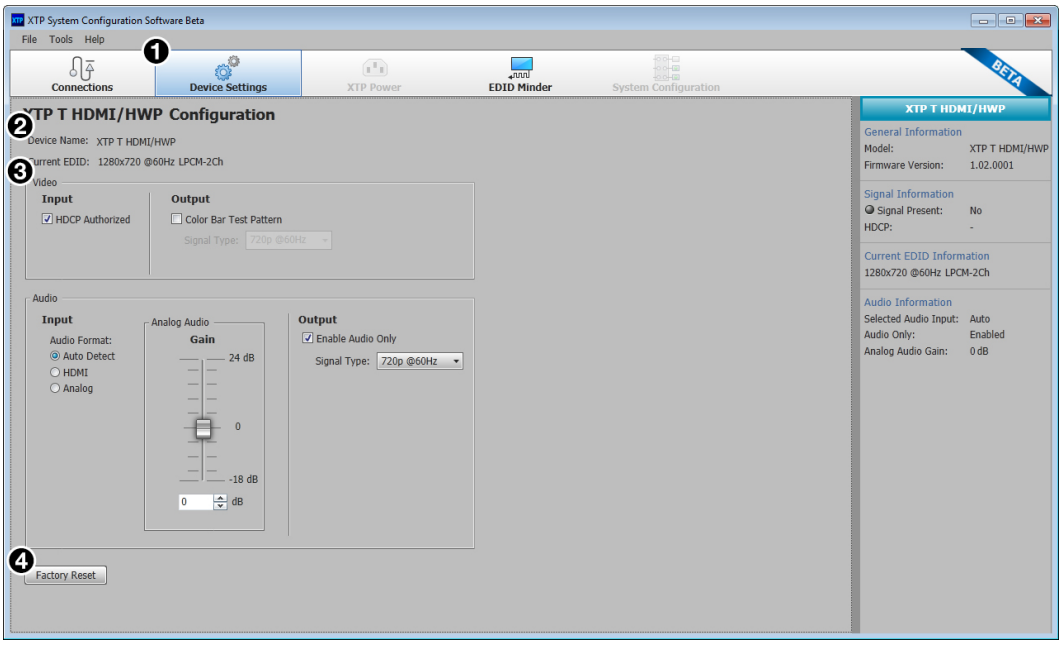


Figure 24. Transmitter Device Settings Screen

NOTES:

- Only the Video Input panel is configurable.
- Configurations made in the Video Output and Audio panels are not available for the XTP T HWP 101.

Status panel

The Status panel displays several current device settings.

❷ **Settings** — Displays the device name and current EDID resolution and refresh rate.

Video panel

The video panel contains an option to enable or disable the HDCP Authorized feature on the video input.

❸ **HDCP Authorized** — Select the HDCP Authorized check box to have the input report as an HDCP authorized device. If the box is not checked, the source is blocked from encrypting its output. This may result in some content not being passed by the source device.

Factory reset

❹ **Factory Reset** — Click the **Factory Reset** button to reset the transmitter to factory settings except for firmware.

NOTE: This is the same as the Esc ZXXX SIS command (see the **System reset command** on page 20).

Device Information panel

The Device Information panel on the right side of the software screen displays device information and settings.

General Information section

❶ **Model** — Displays the device model.

❷ **Firmware Version** — Displays the full firmware version.

Signal Information section

❸ **Signal Present** — Indicates whether a signal is present on the input.

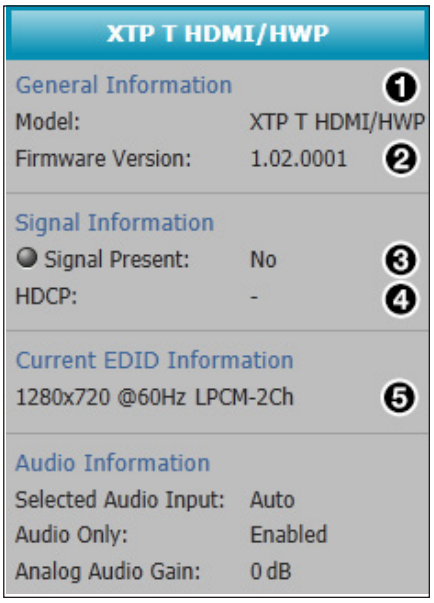
❹ **HDCP** — Displays the HDCP status of the input.

Current EDID Information section

❺ **EDID** — Displays the current resolution and refresh rate.

Audio Information section

This section does not apply to the XTP T HWP 101.



EDID Minder

Use the EDID Minder screen to assign unique EDID to the input or match current output EDID to the input. Click the **EDID Minder** icon (see figure 25, ❶) on the global navigation bar. The EDID Minder screen opens.

The EDID Minder screen displays a table of EDID options and connected output devices, which are each represented by output display icons.

- Factory default EDID options are displayed in blue.
- Connected output resolutions and devices are displayed in green.
- Custom loaded or saved EDID options are displayed in yellow.

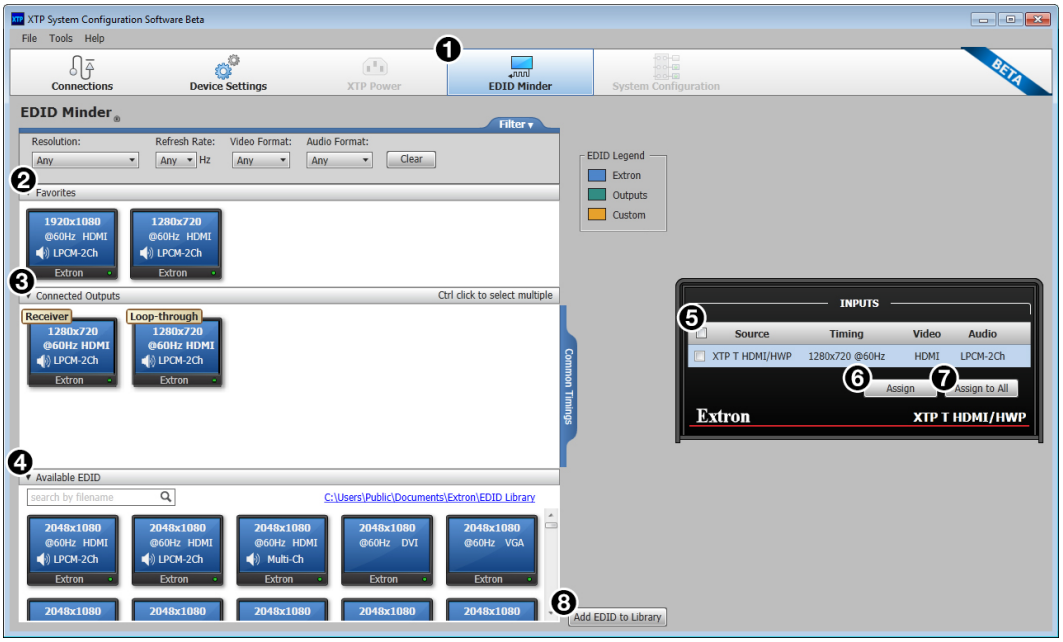


Figure 25. EDID Minder Screen

Assign EDID

To assign EDID to selected inputs:

1. Select an available EDID setting (represented by a blue, green, or yellow output display icon) from the Favorites, Connected Outputs, or Available EDID panel (❷-❹).
2. In the list of inputs on the right side of the screen, select the check box of the connected input (❺).
3. Click the **Assign** button below the input area (❻).

TIP: Alternatively, EDID can be assigned by dragging and dropping the desired EDID onto the input.

To assign EDID to all inputs:

1. Select an available EDID setting (represented by a blue, green, or yellow output display icon) from the Favorites, Connected Outputs, or Available EDID panel (❷-❹).
2. Below the list of inputs on the right side of the screen, click the **Assign to All** button (❼).

Import EDID

1. On the EDID Minder screen, click the **Add EDID to Library** button (see figure 25, ❽ on page 28). The Browse window opens.
2. Select the desired EDID file and click **Open**. The EDID appears in the Available EDID panel (see figure 25, ❹).
3. Assign the EDID from the Available EDID panel to import the EDID setting to the device.

Save output EDID

1. On the EDID Minder screen, right-click on the desired EDID setting in the **Connected Outputs** panel (see figure 25, ❸).
2. Select the **Save EDID to Library** option. The EDID setting is saved to the connected PC. Alternatively, right-click on the desired EDID, select **Copy**, and then **Paste** the EDID into the Favorites or Available EDID panel.

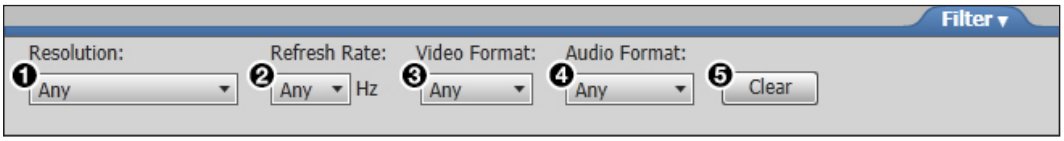
Set favorite EDID

Commonly used EDID settings can be added to the Favorites panel for quick access.

1. Click and drag the desired EDID from the Connected Outputs or the Available EDID panel to the Favorites panel. The EDID setting is copied to the Favorites panel (see figure 25, ❷). Alternatively, right-click the desired EDID and select **Copy**. Then **Paste** the EDID setting into the Favorites panel.

EDID filters

The filters can be used to easily locate a specific EDID setting.



❶ Resolution filter
❷ Refresh Rate filter
❸ Video Format filter
❹ Audio Format filter
❺ Clear button

Figure 26. EDID Minder Filters

To use a filter or combination of filters:

1. Select an EDID setting from one of the drop-down lists of the associated filter (see figure 26, ❶-❹). The available EDID options that match the filter selection are displayed in their respective panels.
2. Repeat step 1 to apply more filters.

To clear the currently applied filters:

1. Click the **Clear** button next to the filters (see figure 26, ❺). All filters are reset.

Common timings

This function automatically displays available EDID settings that are common among multiple selected outputs.

1. Hold <Ctrl> and click the desired outputs in the Connected Outputs panel. The **Common Timings** tab appears, listing the EDID settings common among the selected outputs.
2. Select the desired common EDID setting. The EDID will be shown in the Available EDID panel.

Reference Information

This section contains mounting information and instructions for updating firmware. Topics in this section include:

- **Updating Firmware with Firmware Loader**
- **Mounting Template**

Updating Firmware with Firmware Loader

To upload and update firmware for the XTP T HWP 101, download the new firmware to a connected computer and upload the firmware with the Firmware Loader utility.

Downloading Extron Firmware Loader

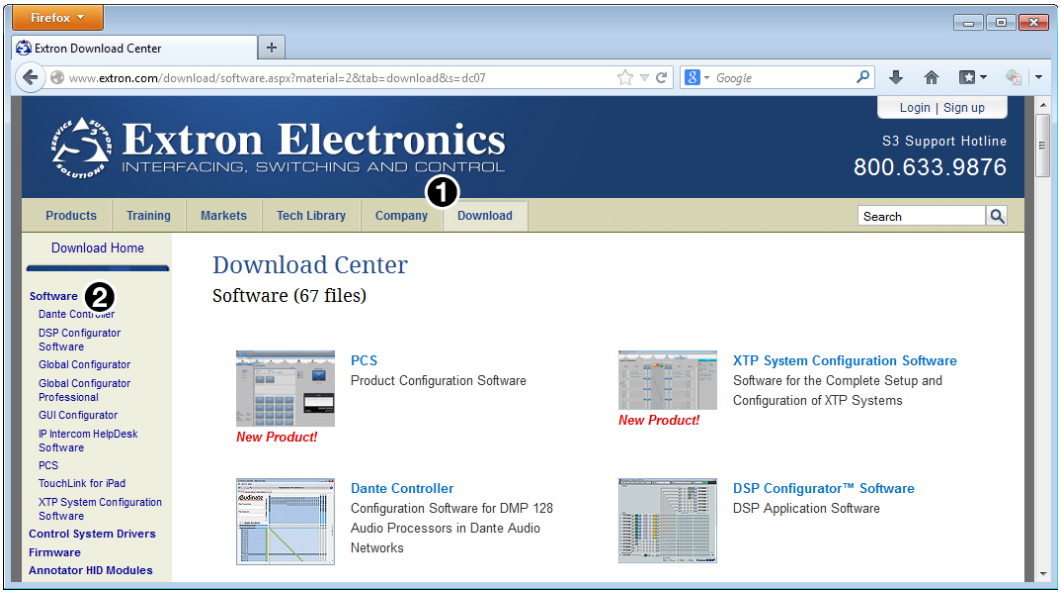
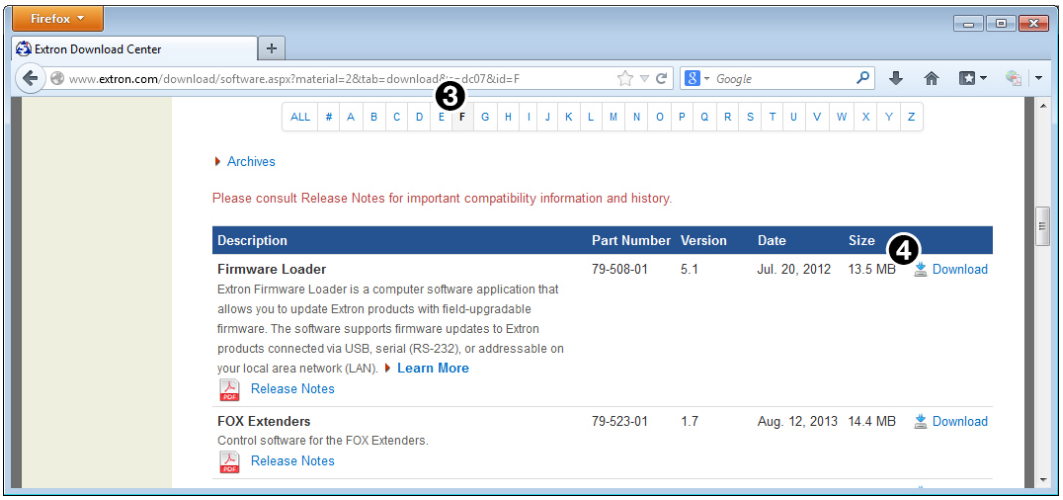


Figure 27. Locating Software on the Extron Website

1. On the Extron **website**, click the **`Download`** tab (see figure 27, ❶).
2. On the left sidebar, click the **`Software`** link (❷).


Firefox
Extron Download Center
www.extron.com/download/software.aspx?material=2&tab=download&ic=dc07&id=F
Google
3
ALL # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Archives
Please consult Release Notes for important compatibility information and history.
Description
Part Number
Version
Date
Size
4
Firmware Loader
79-508-01
5.1
Jul. 20, 2012
13.5 MB
Download
Extron Firmware Loader is a computer software application that allows you to update Extron products with field-upgradable firmware. The software supports firmware updates to Extron products connected via USB, serial (RS-232), or addressable on your local area network (LAN).
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79-523-01
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Control software for the FOX Extenders.
Release Notes

Figure 28. Navigating to Firmware Loader

3. Click the **F** link and navigate to Firmware Loader (see figure 28, ❸).
4. Click the **Download** link on the right that corresponds with the program (❹).
5. Submit any required information to start the download. Note where the file is saved.

Installing Firmware Loader

1. Once Firmware Loader has been downloaded, run the .exe file from the location where the file was saved. The installation wizard window opens.
2. Follow the instructions on the Installation Wizard screens to install Firmware Loader on the computer.

Downloading Firmware

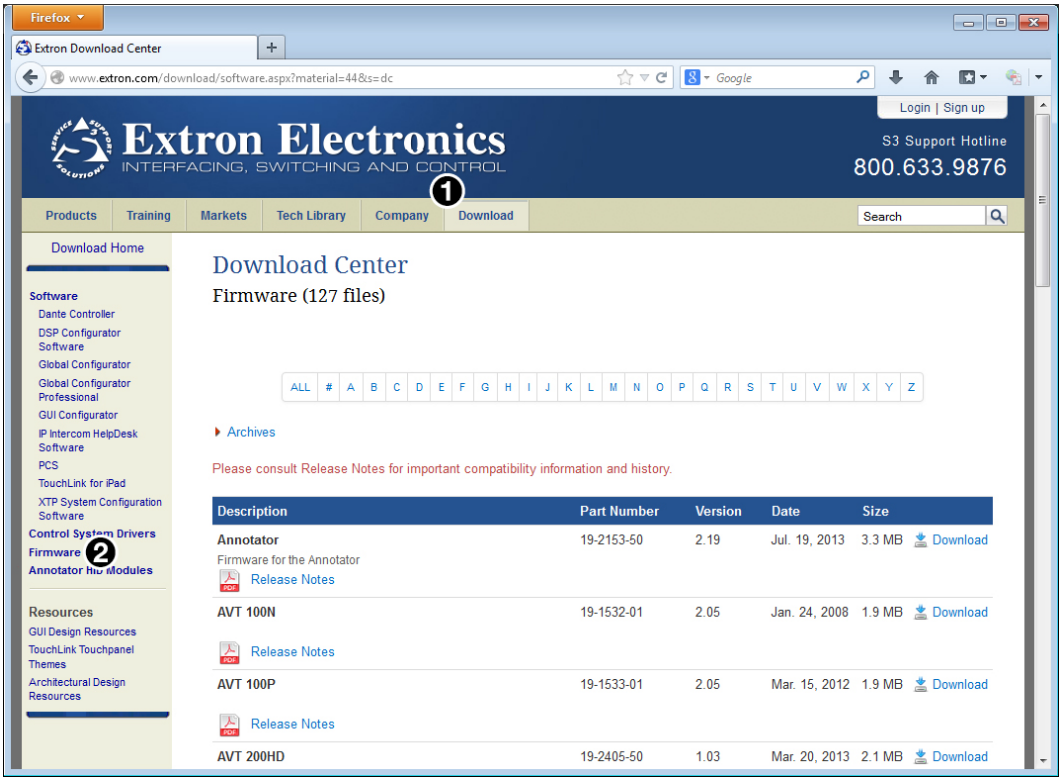

Figure 29. Downloading Firmware from the Extron Website

1. On the Extron **website**, click the **Download** tab (see figure 29, ❶).
2. On the left sidebar, click the **Firmware** link (❷).
3. Navigate to the XTP T HWP 101.
4. Ensure the available firmware version is a later version than the current one on the device.

   NOTE: The firmware release notes provide details about the changes between different firmware versions. The file can be downloaded from the same page as the firmware.

5. Click the **Download** link to the right of the desired device.
6. Submit any required information to start the download. Note where the file is saved.

Installing Firmware with Firmware Loader

Use the Firmware Loader utility to upload firmware to the transmitter when connected directly to the device.

1. Connect the host device to the rear panel USB port.
2. Open Firmware Loader and establish a connection between the computer and the device. The Add Device... dialog box opens.

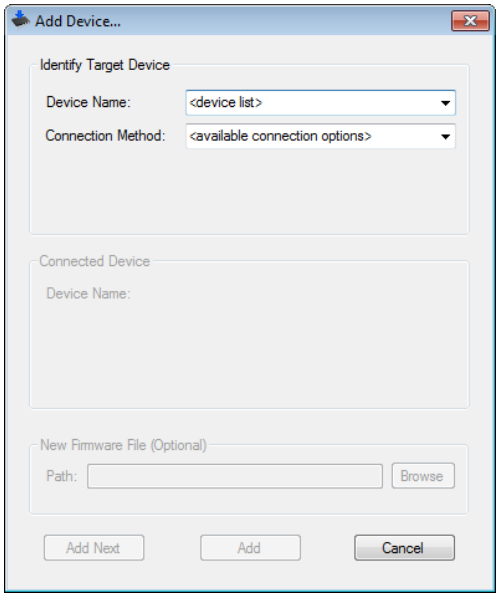

Figure 30. Add Device... Dialog Box

3. From the **Device Name** drop-down list, select **XTP T HWP 101**.

NOTE: If **XTP T HWP 101** is not available, select **XTP T HDMI**.

4. From the **Connection Method** drop-down list, select the method of connection.
5. Depending on the connection method, additional options appear. Make the appropriate selections for the current connection method.
6. Click the **Connect** button.
7. Click the **Browse** button in the New File Firmware (Optional) section. The Open dialog box opens.
8. In the Open dialog box, navigate to the new firmware file, which has an .S19 extension, and select it.

ATTENTION: Valid firmware files must have the file extension .S19. A file with any other extension is not a firmware upgrade for this device and could cause the device to stop functioning.

ATTENTION : Les fichiers firmware valides doivent contenir l'extension fichier S19. Un fichier avec n'importe quelle autre extension n'est pas une mise à jour de firmware pour cet appareil et l'appareil pourrait arrêter de fonctionner.

9. Click the **Open** button. The Browse dialog box closes.
10. Click the **Add** button. The Add Device... dialog box closes and the device and firmware are listed in the Firmware Loader main window.
11. Click the **Begin** button to start the upload process.
12. Close Firmware Loader when the **Remaining Time** field shows **00.00.00**, the **Progress** column is **100%**, and the **Status** field is **completed**.

Mounting Template

Figure 31 is a example of a mounting template for preparing mounting surfaces. It is not to full scale.

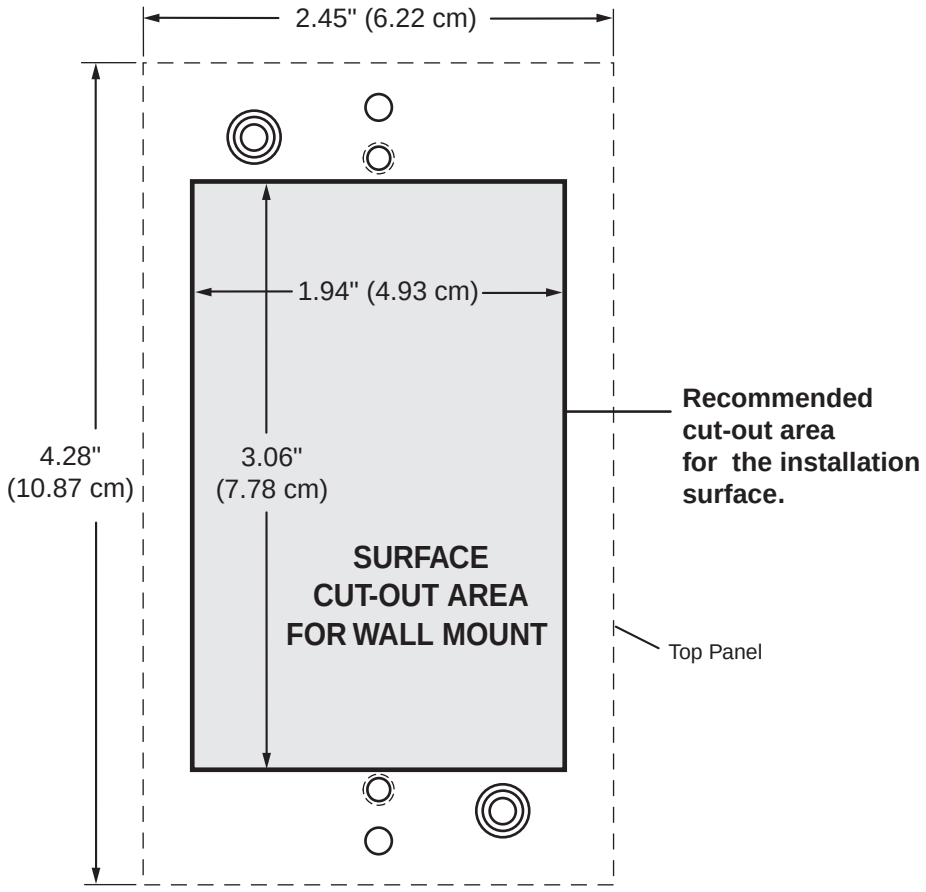

Figure 31. Mounting Template for 1-gang Mud Rings (Not to Full Scale)

NOTE: Measure the template before cutting.

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Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

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NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876 **Europe**: 31.33.453.4040
Asia: 65.6383.4400 **Japan**: 81.3.3511.7655

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